

**DECLARATION****INVENTORSHIP IDENTIFICATION**

As a below named inventor, I hereby declare that my residence, mailing address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (*if only one name is listed below*) or an original, first and joint inventor (*if plural names are listed below*) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**POLYTHIOPHENES, BLOCK COPOLYMERS MADE THEREFROM, AND METHODS OF FORMING  
THE SAME**

**TITLE OF INVENTION****SPECIFICATION IDENTIFICATION**

the specification of which:

- (a) ☐ is attached hereto.
- (b) ☒ was filed on December 4, 2001, as ☒ Serial No. 10/004,782  
☐ and was amended on    (*if applicable*).
- (c) ☐ was described and claimed in PCT International Application No.    filed on     
☐ and was amended on    (*if applicable*).

**ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56.

**PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**  
(Prior Foreign/Pct Application(S) Filed Within 12 Months  
(6 Months For Design) Prior To This Application)

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate(s) or 365(a) of any PCT international application(s) which designated at least one country other than the United States of America, listed below and have also identified below any foreign application(s) for patent or inventor's certificate(s) or any PCT international application(s) having a filing date before that of the application(s) of which priority is claimed.

Application Number	Country or PCT	Date Of Filing (Day, Month, Year)	Priority not Claimed	Certified Copy Attached?
			<input type="checkbox"/>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S) UNDER 35 U.S.C. § 119(e)**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

Provisional Application Number	Filing Date

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S) UNDER 35 U.S.C. 120**

(All Foreign Application(S), *If Any*, Filed More Than 12 Months  
(6 Months For Design) Prior To This U.S. Application)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or 365(c) PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56, which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application.

U.S Parent Application No.	PCT Parent Application No.	Date Of Filing (Day, Month, Year)	Parent Patent No. ( <i>If applicable</i> )

**DECLARATION**

I hereby declare that my presentation of this paper constitutes a certification under 37 C.F.R § 10.18, which provides, in part, that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful statements may jeopardize the validity of the application and any patent issuing therefrom.

## SIGNATURE(S)

## Inventor(s)

Richard D. McCullough  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature Richard D. McCullough

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Jinsong  Liu  
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Inventor's signature Jinsong

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Mailing Address: 3429 Dawson Street, Apt. 106, Pittsburgh, PA 15213

Paul C. Ewbank  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature Paul Ewbank

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Residence St. Paul, MN 55113

Mailing Address: 1280 W. Larpenteur Ave., Apt. 314, St. Paul, MN 55113

Elena E. Sheina  
(GIVEN NAME) (MIDDLE INITIAL OR NAME) FAMILY (OR LAST NAME)

Inventor's signature Elena E. Sheina

Date 01.11.2002 Country of Citizenship Kazakhstan

Residence Pittsburgh, PA 15208

Mailing Address: 6720 Thomas Blvd., Pittsburgh, PA 15208

- ☐ **Signature** by administrator(trix), or legal representative for deceased or incapacitated inventor. *Number of pages added* \_\_\_\_\_.
- ☐ **Signature** for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. *Number of pages added* \_\_\_\_\_.
- ☐ Added page for **signature** by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47) *Number of pages added* \_\_\_\_\_
- ☐ Authorization of attorney(s) to accept and follow instructions from representative.
- ☒ This declaration ends with this page.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**37 C.F.R. § 3.73(b) Statement**

Applicants: McCullough et al.  
Serial No. 10/004,782  
Filed: December 4, 2001

For: POLYTHIOPHENES, BLOCK COPOLYMERS MADE THEREFROM,  
AND METHODS OF FORMING THE SAME

**Carnegie Mellon University, a non-profit Pennsylvania organization** is the assignee of the entire right, title and interest in the patent application identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application identified above. The assignment was recorded in the United States Patent and Trademark Office on \_\_\_at Reel\_, Frame \_, or for which a copy thereof is attached.

OR

B. ☐ A chain of title from the inventor(s) of the patent identified above to the current assignee as shown below:

1. From \_\_\_ To: \_\_\_

The document was recorded in the United States Patent and Trademark Office on \_\_\_\_\_ at Reel \_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

☐ Copies of assignments or other documents in the chain of title are attached.

The undersigned (whose title is supplied below) is empowered to sign this statement on behalf of the assignee.

**Power Of Attorney**

I hereby revoke all previous powers of attorney, if any, and appoint the following attorney(s) and/or agent(s) to prosecute this patent and transact all business in the Patent and Trademark Office connected therewith:

Roberto Capriotti	Reg. No. 46,599	James R. Kyper,	Reg. No. 27,346
Maria Comninou	Reg. No. 44,626	Michael D. Lazzara,	Reg. No. 41,142
George D. Dickos,	Reg. No. 30,048	Mark R. Leslie,	Reg. No. 36,360
Thomas J. Edgington,	Reg. No. 34,324	Franklin B. Molin,	Reg. No. 37,397
Christine R. Ethridge,	Reg. No. 30,557	Robert A. Muha,	Reg. No. 44,249
Jesse A. Hirshman,	Reg. No. 40,016	Donald R. Palladino	Reg. No. 46,976
James M. Joyce,	Reg. No. 43,700	Jonathan C. Parks,	Reg. No. 40,120
Mark G. Knedeisen,	Reg. No. 42,747	Bernard G. Pike	Reg. No. 46,993
William E. Kuss,	Reg. No. 41,919	David Schramm	Reg. No. 41,295
		Robert D. Yeager	Reg. No. 25,047

**Please Direct All Correspondence to:** William E. Kuss, Esquire  
Kirkpatrick & Lockhart, LLP  
Henry W. Oliver Building  
535 Smithfield Street  
Pittsburgh, PA 15222-2312

**Declaration**

I hereby declare that my presentation of this paper constitutes a certification under 37 C.F.R § 10.18, which provides, in part, that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful statements may jeopardize the validity of the application and any patent issuing therefrom.

Date

18 Jan 02

Signature

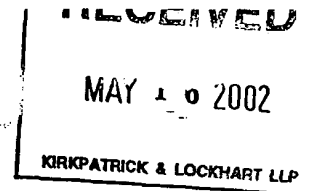
Susan Burkett

Name

Susan Burkett

Title

Associate Provost



MAY 10, 2002

PTAS

Under Secretary of Commerce For Intellectual Property and  
Director of the United States Patent and Trademark Office  
Washington, DC 20231  
www.uspto.gov

KIRKPATRICK & LOCKHART LLP  
WILLIAM E. KUSS  
HENRY W. OLIVER BUILDING  
535 SMITHFIELD STREET  
PITTSBURGH, PA 15222-2312



\*102021367A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 02/21/2002

REEL/FRAME: 012678/0817  
NUMBER OF PAGES: 5

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:  
MCCULLOUGH, RICHARD D.

DOC DATE: 01/14/2002

ASSIGNOR:  
LIU, JINSONG

DOC DATE: 01/11/2002

ASSIGNOR:  
EWBANK, PAUL C.

DOC DATE: 01/15/2002

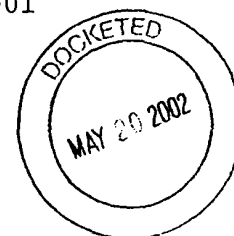
ASSIGNOR:  
SHEINA, ELENA E.

DOC DATE: 01/11/2002

ASSIGNEE:  
CARNEGIE MELLON UNIVERSITY  
5000 FORBES AVENUE  
PITTSBURGH, PENNSYLVANIA 15213

SERIAL NUMBER: 10004782  
PATENT NUMBER:

FILING DATE: 12/04/2001  
ISSUE DATE:



012678/0817 PAGE 2

JEEVON JONES, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS



2/21/02

03-190002



102021367

Form PTO-1595 (Rev. 03/01) OMB No. 0651-0027 (exp. 5/31/2002)	OFFICE OF PUBLIC RECORDATION FOR <b>PATENTS</b> FEB 21 PM 4:12	DEPT. OF COMMERCE Patent and Trademark Office
Tab settings ==>=		

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

<b>1. Name of conveying party(ies):</b> <b>Richard D. McCullough, Jinsong Liu, Paul C. Ewbank and Elena E. Sheina</b> Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>2. Name and address of receiving party(ies)</b> Name: <b>Carnegie Mellon University</b> Internal Address: _____ _____ Street Address: <b>5000 Forbes Avenue</b> _____ City: <b>Pittsburgh</b> State: <b>PA</b> Zip: <b>15213</b>  Additional name(s) and address(es) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>3. Nature of conveyance:</b> <input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name <input type="checkbox"/> Other _____  Execution Date: <b>January 14, 2002, January 11, 2002, January 15, 2002 and January 11, 2002</b>	

<b>4. Application number(s) or patent number(s):</b> If this document is being filed together with a new application, the execution date of the application is: A. Patent Application No.(s) <b>10/004,782</b> B. Patent No.(s) _____  Additional number(s) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
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<b>5. Name and address of party to whom correspondence concerning document should be mailed.</b>  Name: <b>William E. Kuss, Esq.</b>  Internal Address: <b>Kirkpatrick &amp; Lockhart LLP</b> <b>Henry W. Oliver Building</b>  Street Address: <b>535 Smithfield Street</b>  City: <b>Pittsburgh</b> State: <b>PA</b> Zip: <b>15222-2312</b>	<b>6. Total number of applications and patents involved:</b> <b>1</b>  <b>7. Total fee (37 CFR 3.41).....\$ 40.00</b>  <input checked="" type="checkbox"/> Enclosed <input type="checkbox"/> Authorized to be charged to deposit account  <b>8. Deposit account number:</b> _____  (Attach duplicate copy of this page if paying by deposit account)
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DO NOT USE THIS SPACE

<b>9. Statement and signature.</b> <i>To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.</i>		
<b>William E. Kuss</b> Name of Person Signing	 Signature	<b>2/21/02</b> Date
Total number of pages including cover sheet, attachments, and documents: <b>6</b>		

03/18/2002 6TON11 00000187 10004782  
01 FC:581 40.00 OP

Mail documents to be recorded with required cover sheet information to:  
Commissioner of Patents & Trademarks, Box Assignments  
Washington, D.C. 20231

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: McCullough et al.  
Application No.: 10/004,782  
Filed: December 4, 2001

For: POLYTHIOPHENES, BLOCK COPOLYMERS MADE THEREFROM, AND METHODS OF FORMING THE SAME

**Box: Assignment**  
**Commissioner for Patents**  
**Washington, DC 20231**

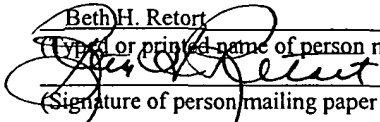
**EXPRESS MAIL CERTIFICATE**

"Express Mail" label number EU150766849US

Date of Deposit February 21, 2002

I hereby certify that the following attached paper or fee  
**PTO FORM-1595**  
**ASSIGNMENT OF INVENTION**  
**CEHCK PAYABLE TO PTO**

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Box: Assignment  
Commissioner for Patents, Washington, DC 20231.

Beth H. Retort  
(Typed or printed name of person mailing paper or fee)  
  
(Signature of person mailing paper or fee)

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**NOTE:** The label number need not be placed in each page. It should, however, be placed on the first page of each separate document, such as, a new application, amendment, assignment, and transmittal letter for a fee, along with the certificate of mailing by "Express Mail." Although the label number may be on checks, such a practice is not required. In order not to deface formal drawings it is suggested that the label number be placed on the back of each formal drawing or the drawings be accompanied by a set of informal drawings on which the label number is placed.

**(Express Mail Certificate [8-3])**

Attorney's Docket No. 010500

**PATENT**

For: ☒ U.S. and/or ☒ Foreign Rights  
For: ☒ U.S. Application or  
☐ U.S. Provisional Application  
For: ☐ U.S. Patent  
For: ☐ PCT Application  
By: Multiple Inventors

**ASSIGNMENT OF INVENTION (MULTIPLE INVENTORS)**

In consideration of the payment by ASSIGNEE to ASSIGNOR of the sum of One Dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration,

**ASSIGNORS (Inventors):**

Richard D. McCullough  
(type or print name of inventors)

1051 Thoroughbred Court  
Allison Park, PA 15101 USA  
Address Nationality

Jinsong Liu

3429 Dawson Street, Apt. 106  
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Paul C. Ewbank

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Elena E. Sheina

6720 Thomas Blvd.  
Pittsburgh, PA 15208 Kazakhstan

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hereby sells, assigns and transfers to

ASSIGNEE:

Carnegie Mellon University  
(type or print name of ASSIGNEE)

5000 Forbes Avenue  
Address

(a non-profit Pennsylvania organization)  
Nationality

Pittsburgh, PA 15213

and the successors, assigns and legal representatives of the ASSIGNEE

(complete one of the following)

☒ the entire right, title and interest

☐ an undivided \_\_\_\_\_ percent ( \_\_\_\_\_ %) interest for the United States and its territorial possessions

(check the following box, if foreign rights are also to be assigned)

☒ and in all foreign countries, including all rights to claim priority, in and to any and all improvements which are disclosed in the invention entitled **POLYTHIOPHENES, BLOCK COPOLYMERS MADE THEREFROM, AND METHODS OF FORMING THE SAME**

(check and complete (a), (b), (c), (d), (e), (f) or (g))

and which is found in

- (a) ☐ U.S. patent application executed on even date herewith
- (b) ☐ U.S. patent application executed on \_\_\_\_\_
- (c) ☐ U.S. provisional application naming the above inventor(s) for the above-entitled invention

☐ Express mail label no.: \_\_\_\_\_

Mailed: \_\_\_\_\_

☐ To comply with 37 CFR 3.21 for recordal of this assignment, I, an ASSIGNOR signing below, hereby authorize and request my attorney to insert below the filing date and application number when they become known.

(d) ☒ U.S. application no.: 10/004,782 filed on December 4, 2001

(e) ☐ International application no. PCT / \_\_\_\_\_ / \_\_\_\_\_  
filed on \_\_\_\_\_

(f) ☐ U.S. patent no. \_\_\_\_\_ issued \_\_\_\_\_

☐ A change of address to which correspondence is to be sent regarding patent maintenance fees is being sent separately.

(also check (g), if foreign application(s) is also being assigned)

- (g) ☒ and any legal equivalent thereof in a foreign country, including the right to claim priority and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, renewal, or substitute thereof, and as to letters patent any reissue or re-examination thereof.

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;

ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

IN WITNESS WHEREOF, We have hereunto set hand and seal on the date(s) indicated below.

WARNING: The date of signing must be the same as the date of execution of the application, if item (a) was checked above.

Richard D. McCullough  
(type name of Inventor)

Richard D. McCullough 1-14-02  
Signature of INVENTOR Date

Jinsong Liu  
(type name of Inventor)

[Signature] 1/11/02  
Signature of INVENTOR Date

Paul C. Ewbank  
(type name of Inventor)

Paul Ewbank 1/15/02  
Signature of INVENTOR Date

Elena E. Sheina  
(type name of Inventor)

Elena E. Sheina 1.11.2002  
Signature of INVENTOR Date

☐ Notarization or Legalization Page Added.

NOTE: No witnessing, notarization or legalization is necessary. If the assignment is notarized or legalized, then it will only be prima facie evidence of execution. 35 USC 261. Use next page if notarization is desired.